



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,262	07/30/2001	Stephen Michael Randail	1004-022US01	2264

32692 7590 11/28/2003

3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

EXAMINER

CHOI, JACOB Y

ART UNIT	PAPER NUMBER
----------	--------------

2875

DATE MAILED: 11/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/918,262	RANDALL, STEPHEN MICHAEL	
	Examiner	Art Unit	
	Jacob Y Choi	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-13, 24-29, & 33-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naum (USPN 6,272,269) in view of either Petell et al. (USPN 6,302,570) or Damsky et al. (USPN 5,647,657).

Regarding claims 1, 9, 11, 24, 26 & 35, Naum discloses a light emitting diode that emits a radiation pattern (column 1, lines 7-15; figure 10), wherein a maximum luminous intensity of the radiation pattern is displaced relative to a center axis of the light emitting diode (26, 28; common properties of light emitting diode(s)), and a light guide positioned to be illuminated by the light emitting diode (column 5, lines 9-20; figures 5, 9, 23A, 24), each light guide positioned at offset locations relative to the center axis of the light emitting diode (figure 10; center axis of the each diode, except the center diode, being offset from the light guide). Naum discloses the claimed invention except details of a number of light guides positioned to be illuminated by the light emitting diode. Petell et al. and Damsky et al. teaches that fiber optic bundle/light guides (341, 340 & LL, EL) positioned to be illuminated by the light source. It would

have been obvious to one having ordinary skill in the art at the time the invention was made to use modification in Naum (optical fiber) as taught by Petell et al. or Damsky to utilize a common fiber optic bundle rather than a solid light guide or a single optical fiber to transfer light to various location.

The functional recitation that "wherein a maximum luminous intensity of the radiation pattern is displaced relative to a center axis of the light emitting diode" has not been given patentable weight because it is narrative in form. In order to be given patentable weight, a functional recitation must be expressed as a "means" for performing the specified function, as set forth in 35 USC § 112, 6th paragraph, and must be supported by recitation in the claim of sufficient structure to warrant the presence of the functional language. *In re Fuller*, 1929 C.D. 172; 388 O.G. 279.

Regarding claims 2, 10, 25, & 27, Naum in view of Petell et al. or Damsky et al. disclose the claimed invention. In addition, mentioned references disclose each light guide is positioned such that a cross-sectional center of each light guide substantially corresponds to locations of the maximum luminous intensity of the radiation pattern of the light emitting diode.

Regarding claim 3, & 28, Naum in view of Petell et al. or Damsky et al. disclose the claimed invention. In addition, mentioned references disclose the number of light guides includes two light guides.

Regarding claim 4, Naum in view of Petell et al. or Damsky et al. disclose the claimed invention. In addition, mentioned references disclose the number of light guides includes two light guides.

Regarding claim 5, Naum in view of Petell et al. or Damsky et al. disclose the claimed invention. In addition, Naum discloses a light guide fixture formed to mate with the light guides, wherein the light guide fixture positioned the light guides at the offset locations relative to the center axis of the light emitting diode.

Regarding claims 6 & 12, Naum in view of Petell et al. or Damsky et al. disclose the claimed invention. In addition, mentioned references disclose the light guide fixture is positioned adjacent the light emitting diode.

Regarding claims 7 & 13, Naum in view of Petell et al. or Damsky et al. disclose the claimed invention. In addition, mentioned references disclose the light guide fixture is a housing that houses the light emitting diode.

Regarding claim 8, Naum in view of Petell et al. or Damsky et al. disclose the claimed invention. In addition, mentioned references disclose at least one of the light guides provides directional side lighting in a first direction and wherein at least another of the light guides provides directional side lighting in second directions.

Regarding claim 29, Naum in view of Petell et al. or Damsky et al. disclose the claimed invention. In addition, mentioned references disclose each light guide provides directional side lighting in a unique location.

Regarding claims 33 & 34, it has been held that to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative sense, and not to amount to the mere claiming of a use of a particular structure. Ex parte Pfeiffer, 1962 C.D. 408 (1961). Therefore, Naum in view of Petell et al. or Damsky et al. disclose the claimed structural limitations and similarly mentioned

references disclose positioning a number of light guides next to a LED that emits a radiation pattern wherein a maximum luminous intensity of the radiation pattern is displaced relative to a center axis of the LED, each light guide being positioned at offset locations relative to the center axis of the LED, illuminating the light guides with the LED, and positioning each light guide such that a cross-sectional center of each light guide substantially corresponds to locations of the maximum luminous intensity of the radiation pattern of the LED.

Regarding claim 36, Naum in view of Petell et al. or Damsky et al. disclose the claimed invention. In addition, mentioned references disclose the frame is formed with holes and the each light guide protrudes through at least one of the holes.

Regarding claim 37, Naum in view of Petell et al. or Damsky et al. disclose the claimed invention. In addition, mentioned references disclose the LED is a first LED, the sign further comprising a second LED housed within the frame wherein the first and second light guides are positioned to be illuminated by the second LED.

Regarding claim 38, Naum in view of Petell et al. or Damsky et al. disclose the claimed invention. In addition, mentioned references disclose the first and second light guides provide lighting in different colors.

3. Claims 1-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoneda (USPN 6,595,674) in view of McGaffigan (USPN 6,337,946).

Regarding claims 1, 9, 11, 24, 26 & 35, Yoneda discloses a light emitting diode, and a light guide positioned to be illuminated by the light emitting diode (figure 5), each

light guide positioned at offset locations relative to the center axis of the light emitting diode (figure 5). Yoneda discloses the claimed invention except details a light emitting diode that emits a radiation pattern. McGaffigan teaches that it is known that a light emitting diode that emits a radiation pattern, wherein a maximum luminous intensity of the radiation pattern is displaced relative to a center axis of the light emitting diode (figures 15A, 15B, & 15C). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use modification in Yoneda as taught by McGaffigan to utilize a commonly known facts on relative luminous intensity of light emitting diode to offset (column 22-23, lines 66-20) the plurality of optical fiber from its LED for enhanced brightness of the each optical fiber rod.

Regarding claims 2, 10, 25, & 27, Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose each light guide is positioned such that a cross-sectional center of each light guide substantially corresponds to locations of the maximum luminous intensity of the radiation pattern of the light emitting diode.

Regarding claims 3 & 28, Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose the number of light guides includes two light guides.

Regarding claim 4, Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose the number of light guides includes two light guides.

Regarding claim 5, Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose a light guide fixture formed to mate with the light guides, wherein the light guide fixture positioned the light guides at the offset locations relative to the center axis of the light emitting diode.

Regarding claims 6 & 12, Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose the light guide fixture is positioned adjacent the light emitting diode.

Regarding claims 7 & 13, Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose the light guide fixture is a housing that houses the light emitting diode.

Regarding claim 8, Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose at least one of the light guides provides directional side lighting in a first direction and wherein at least another of the light guides provides directional side lighting in second directions.

Regarding claim 29, Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose each light guide provides directional side lighting in a unique location.

Regarding claims 33 & 34, it has been held that to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative sense, and not to amount to the mere claiming of a use of a particular structure. Ex parte Pfeiffer, 1962 C.D. 408 (1961). Therefore, Yoneda in view of McGaffigan disclose the claimed structural limitations and similarly mentioned references disclose positioning

a number of light guides next to a LED that emits a radiation pattern wherein a maximum luminous intensity of the radiation pattern is displaced relative to a center axis of the LED, each light guide being positioned at offset locations relative to the center axis of the LED, illuminating the light guides with the LED, and positioning each light guide such that a cross-sectional center of each light guide substantially corresponds to locations of the maximum luminous intensity of the radiation pattern of the LED.

Regarding claim 36, Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose the frame is formed with holes and the each light guide protrudes through at least one of the holes.

Regarding claim 37, Yoneda in view of Petell et al. discloses the claimed invention, explained above. In addition, mentioned references disclose the LED is a first LED, the sign further comprising a second LED housed within the frame wherein the first and second light guides are positioned to be illuminated by the second LED.

Regarding claim 38, Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose the first and second light guides provide lighting in different colors.

Regarding claim 14, Yoneda discloses a LED, a light guide fixture, the light guide fixture formed to mate with the light guides, a first light guide having a first end mated with the light guide fixture, wherein the first end of the first light guide is positioned at a first offset location relative to the center axis of the LED, a second light guide having a first end mated with the light guide fixture, wherein the first end of the second light guide is positioned at a second offset location relative to the center axis of the LED. Yoneda

discloses the claimed invention except details a light emitting diode that emits a radiation pattern. McGaffigan teaches that it is known that a light emitting diode that emits a radiation pattern, wherein a maximum luminous intensity of the radiation pattern is displaced relative to a center axis of the light emitting diode (figures 15A, 15B, & 15C). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use modification in Yoneda as taught by McGaffigan to utilize a commonly known facts on relative luminous intensity of light emitting diode to offset (column 22-23, lines 66-20) the plurality of optical fiber from its LED for enhanced brightness of the each optical fiber rod.

Regarding claim 15, Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose the first end of the first light guide is positioned such that a cross-sectional center of the first light guide substantially corresponds to a first location of the maximum luminous intensity of the radiation pattern of the LED, and wherein the first end of the second light guide is positioned such that a cross-sectional center of the second light guide substantially corresponds to a second location of the maximum luminous intensity of the radiation pattern of the LED.

Regarding claim 16 Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose the first and second locations of the maximum luminous intensity of the radiation pattern of the LED are substantially rotationally symmetric around the center axis of the LED.

Regarding claim 17, Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose the light guide fixture is positioned adjacent the LED.

Regarding claim 18, Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose the light guide fixture is a housing that houses the LED.

Regarding claim 19, Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose LED is a first LED and the light guide fixture a first light guide fixture, the illumination device further comprising, a second LED that emits a radiation pattern wherein a maximum luminous intensity of the radiation pattern of the second LED is displaced relative to a center axis of the second LED, a second light guide fixture, the second light guide fixture formed to mate with the light guides, wherein the first light guide has a second end mated with the second light guide fixture, wherein the second end of the light guide is positioned at a first offset location relative to the center axis of the second LED, and wherein the second light guide has a second end mated with the second light guide fixture, wherein the second end of the second light guide is positioned at a second offset location relative to the center axis of the second LED.

Regarding claim 20, Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose the first end of the first light guide is positioned such that a cross-sectional center of the first light guide substantially corresponds to a first location of the maximum luminous intensity of the

radiation pattern of the first LED, wherein the first end of the second light guide is positioned such that a cross-sectional center of the second light guide substantially corresponds to a second location of the maximum luminous intensity of the radiation pattern of the first LED, wherein the second end of the first light guide is positioned such that a cross-sectional center of the first light guide substantially corresponds to a first location of the maximum luminous intensity of the radiation pattern of the second LED, and wherein the second end of the second light guide is positioned such that a cross-sectional center of the second light guide substantially corresponds to a second location of the maximum lumens intensity of the radiation pattern of the second LED.

Regarding claim 21, Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose the first light guide fixture is positioned adjacent the first LED, and wherein the second light guide fixture is positioned adjacent the second LED.

Regarding claim 22, Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose the first light guide fixture is a housing that houses the first LED, and wherein the second light guide fixture is a housing that houses the second LED.

Regarding claim 23, Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose the first light guide provides directional side lighting in a first direction, and wherein the second light guide provides directional side lighting in a second direction.

Regarding claim 30, Yoneda discloses a frame, a first light guide fixture, the first light guide fixture formed to mate with light guides, wherein the first LED and the first light guide fixture are housed in the frame, a first light guide having a first end mated with the first light guide fixture, wherein the first end of the first light guide is positioned at a first offset location relative to the center axis of the LED, a second light guide having a first end mated with the first light guide fixture, wherein the first end of the second light guide is positioned at a second offset location relative to the center axis of the first LED, a second LED, and a second light guide fixture, the second light guide fixture formed to mate with light guides, wherein the first light guide has a second end mated with the second light guide fixture, wherein the second end of the first light guide is positioned at a first offset location relative to the center axis of the second LED, wherein the second light guide has a second end mated with the second light guide fixture, wherein the second end of the light guide is positioned at a second offset location relative to the center axis of the second LED, and wherein the frame is formed with holes and wherein the first and second light guide pass through the holes. Yoneda discloses the claimed invention except details a light emitting diode that emits a radiation pattern. McGaffigan teaches that it is known that a light emitting diode that emits a radiation pattern, wherein a maximum luminous intensity of the radiation pattern is displaced relative to a center axis of the light emitting diode (figures 15A, 15B, & 15C). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use modification in Yoneda as taught by McGaffigan to utilize a commonly known facts on relative luminous intensity of light emitting diode to offset

(column 22-23, lines 66-20) the plurality of optical fiber from its LED for enhanced brightness of the each optical fiber rod.

Regarding claim 31, Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose the first and second light guides are positioned such that a cross-sectional center of each light guide substantially corresponds to locations of the maximum luminous intensity of the radiation pattern of each of the LEDs.

Regarding claim 32, Yoneda in view of McGaffigan discloses the claimed invention, explained above. In addition, mentioned references disclose the locations of the maximum luminous intensity of the radiation pattern of the LED are substantially rotationally symmetric around the center axis of the LED.

Response to Amendment

4. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Response to Arguments

5. Applicant's arguments with respect to claims 1-38 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dumas et al. (USPN 5,353,365) – multi-wave guide cylindrical optical conductor for telecommunications cable and method of making same

Lekson et al. (USPN 6,305,813) – display device using a light guide for exterior automotive lighting (see figure 4A)

Lekson et al. (USPN 6,623,132) – light coupler hingedly attached to a light guide for automotive lighting (see figure 4A)

Ikeda (USPN 6,612,730) – rod-shaped light guide and illuminating device incorporating rod-shaped light guide (see figure 3)

Hering et al. (USPN 6,367,957) – lighting, especially for motor vehicles (see figure 1)

Smith (USPN 4,719,544) – electronic jewelry

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Y Choi whose telephone number is (703) 308-4792. The examiner can normally be reached on Monday-Friday (10:00-7:00).

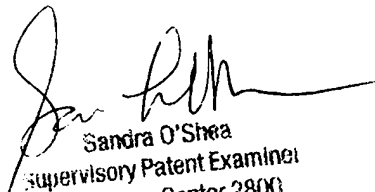
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703) 305-4939. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-7724.

Application/Control Number: 09/918,262
Art Unit: 2875

Page 15

JC


Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800